IMPLEMENTATION OF DepEd COMPUTERIZATION PROGRAM (DCP) FOR THE INDIGENOUS PEOPLE

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ABSRACT

This study delved on the implementation of the DepEd Computerization Program (DCP) to the Indigenous School in Surigao del Sur Division. This study is anchored principally on DepEd Order No. 78, s. 2010. This study sought to find out the respondents' profile, the degree of implementation of DCP, significant relationship concerning implementers' profile and the implementation of the program, and the problems encountered throughout the implementation. A researcher-made questionnaire was used to generate the data needed to complete the study. The results generated the following findings: a number of the implementers are female who are in their late 20s. The implementers of the program also have 1 to 3 years of teaching experience and 1 to 8 hours of trainings attended related to ICT and most of them have units in graduate studies. In the extent of implementation of the program, it was found out that the e- classrooms outlets and plugs are in good condition.This study showed that the implementers' profile has no significant relationship in the implementation of DCP to the IP school recipient. In the relationship between the grades of the pupils in EPP and the implementation of DCP, good relationship is observed. In the problems encountered the following were identified as problems in the implementation of the program: the ratio of computers to pupils, no LAC sessions or trainings conducted, not enough budget or funds to support for the replacement of the equipment damaged, and people in the community have less knowledge in operating computers. It is concluded that the program is not fully implemented due to lack of equipment, insufficient trainings of the implementers and inadequate knowledge of the IP community about computers.

Keywords: DepEd Computerization Program (DCP), Implementation, Indigenous Schools, Implementers.

INTRODUCTION

Integration of technology into the learning process brings new opportunities nowadays. Computers indeed have some attributes that, when used correctly, can facilitate student learning. It offers the ability to provide instruction at any phase, in some place and at any pace, thus generating an extremely flexible learning environment whether through providing more interaction with content or more interaction with other people, computers can support actual learning (Collins and Tinkew, 2010; Courts and Tucker, 2012; & Morgan, 2012). The Philippines have been adopting the different changes in the educational system and fitting it to the needs that are required today, and one of these is the implementation of the DepEd Computerization Program (DCP). Through this, it gives the teachers and learners' access to technology in their lessons even if the schools are located far flung (DepEd Order No. 78, s. 2010). Thus, this study wants to measure the implementation of the DCP for the indigenous learners and the integration of the program to school system.

With the above mentioned benefits of computers especially to the indigenous learners, Wright (2015) specified that "Importance of Computer Education to Students"- along with

improving the way pupils are taught; it is vitally significant that students learn to use computers to improve their work and prepare for careers in a world where computers have become as common as the pencil and paper. In the Philippines, DepEd Order No. 78, s. 2010 which was released on June 10, 2010 emphasize the Guidelines on the Implementation of the DepEd Computerization Program (DCP) which aims to provide public schools with appropriate technologies that would enhance the teaching-learning process and meet the challenges of the 21st century.

However, many indigenous people lack access to the internet or do not have the expertise to use ICTs to create their own content and resources. Given the fact that DepEd is giving programs to provide the public schools appropriate technologies for the teaching-learning process, there are schools that are still not reached by this program especially those schools situated in the far flung areas. If only teachers understand the importance of integrating technology into their lessons and receive the professional development needed in their fields, they could become accustomed to use technology tools; therefore, pupils learning and motivation could increase.

Thus the researcher finds it valuable to conduct this study to determine the extent of implementation of the DCP to the indigenous people and how is this being utilized, integrated into the teaching-learning process to assure lifelong learning to their indigent students.
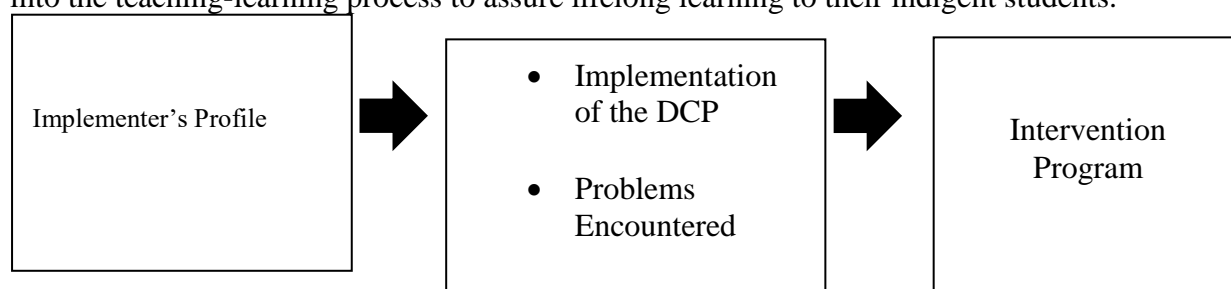

Figure 1. Schematic Diagram of the Study

STATEMENT OF THE PROBLEM
The study aimed to determine the extent of Implementation of the DepEd Computerization Program (DCP) to the IP schools. Further, this sought to answer the following problems:

1. What is the profile of the implementers in terms of the following indicators:
    1.1. Age;
    1.2 Gender;
    1.3 Length of Service;
    1.4 Trainings related to ICT;
    1.5 Highest Educational Attainment?
2. What is the extent of implementation of the DepEd Computerization Program in term of the following indicators:
    2.1 infrastructure;
    2.2 integration of ICT to school system;
    2.3 Raising the ICT literacy of the learners;
    2.4 Monitoring and Evaluation?
3. Is there a significant relationship between the profile of the implementers and the implementation of the DepEd Computerization Program?
4. Is there a significant relationship between the grades in the EPP of Grade 5 pupils and the extent of implementation of the DCP?

5. What are the problems encountered during the implementation of the DepEd Computerization Program?

6. What intervention may be proposed based on the findings of the study?

HYPOTHESIS

This study verified the null-hypothesis viz:

H_{o1} : There is no significant relationship between the profile of the implementers and the implementation of the DepEd Computerization Program.

H_{o2} : There is no significant relationship between the grades in the EPP of Grade 5 pupils and the extent of implementation.

SIGNIFICANCE OF THE STUDY

This study aimed to provide relevant information on understanding the extent of Implementation of the DCP to the indigenous learners. The researcher believed that the result of this study will help the; DepEd Officials to improve the implementation process of the program, the school administrators that they may get information about the need of using of technology for developing the computer literacy skills of the indigenous learners for lifelong learning; through this knowledge, they may provide greater avenue of the teacher's use of technology in the teaching-learning process, the school ICT coordinators to help them create action plans to bridge the problems encountered in the implementation of the programs in school settings, the parents in giving them relevant information on how are they going to support their children and encourage them to attend school, the future researchers to serve as reference for the future researcher if they will conduct a research that is related to this study.

SCOPE AND LIMITATION OF THE STUDY

This study is focused on the implementation of the DCP to the IPs and determine the extent of implementation. It is also focused on determining the relationship of the respondents and the extent of implementation of the program. The respondents of the study were the school ICT Coordinators and teachers who have indigent enrolees. These were the schools under study: Cabangahan Integrated School of Cantilan I District, schools from San Miguel namely Haguimitan Elementary School, Umalag Elementary School, Catabadan Elementary School, Libas Sud Integrated School, San Roque Elementary School, Bolhoon Elementary School, Baras Elementary School, and Rajah Cabungsuan Integrated School and Bogak Elementary School in Lingig. This study also included the grades of the learners in Grade 5 EPP as secondary data to identify the significant relationship between the grades in the EPP of Grade 5 pupils and the extent of implementation of the DCP.

DEFINITION OF TERMS

For a clear understanding of the study, the following words or terminologies were operationally and conceptually defined:

DepEd Computerization Program. This is also known as DCP. It aims to provide public schools with appropriate technologies that would enhance the teaching-learning process and meet the challenges of the 21st century (DepEd Order 78 s. 2010).

ICT Coordinators. These are the teachers who are in-charge of the DCP packages of DepEd and are the one who are knowledgeable about the use of technology and other gadgets in school.

ICT Implementation. This refers to carrying out the objectives of the DepEd Computerization Program to assure lifelong learning.

ICT Infrastructure. This pertains to the electronic laboratory building, materials and its structure.

ICT Integration. This is the process of using technology in the school system and teaching and learning process.

ICT Literacy. This relates to the learners' capacity to use educational technologies like computers.

Implementers. This refers to teachers and ICT coordinators that implement the DepEd Computerization Program.

LITERATURE AND STUDIES

The tremendous growth of technology and computer applications affected almost every aspect of everyday life, worldwide. This is also the case in the field of education; the latter has changed dramatically by endorsing applications that help students improve their written and verbal abilities as well as help them develop new skills that broaden their potentials (Morgan, 2012). Integration of technology into the learning process brings new opportunities nowadays. The relationship of lifelong learning to the rapidly changing world of information and educational technologies, and to the various conceptions of interaction that are central to these technologies has been considered much less frequently (Collins and Tinkew, 2010). Computers do indeed have some attributes that, when used correctly, can facilitate student learning. It can offer the ability to provide instruction at any time, in any place and at any pace, thus creating a highly flexible learning environment. Whether through providing more interaction with content or more interaction with other people, computers can support effective learning. This, then, is when computers teach and when they add value to schools (Courts and Tucker, 2012).

Integrating computers into the school curriculum is essential for school-age children to learn better through technology. Undoubtedly, the rise of the internet has made information much more widely available than before and possibly influenced what it means to be educated. Presenting multimedia lessons to learners will increase their achievement over traditional instruction (Courts and Tucker, 2012). Technology in school is indeed of great help when used properly, it will be a boundless advantage to sharpen students' skills and knowledge. It can help facilitate the knowledge-constructed classroom. Many researchers view computers as having a positive influence on the teaching and learning processes. Technological tools, especially personal computers, are often cited by educators and policymakers as magic-workers in literacy programs, providing great access to all students (Motteram, 2013).

Furthermore, Courts and Tucker (2012) claimed that use of computers can increase the capacity of the students to learn and study on their self-paced mode of learning. It may also be accounted to the fact that every student has their exceptional capacity when it comes to learning, unique as they say in their own way. Using ICT, students' creativity can be optimized. They may discover new multimedia tools and creative materials in the styles readily available to them through games, CDs, and television. With a combination of students' autonomy, capability and creativity, the use of ICT can improve both teaching and learning quality (Gee, 2011). Also, technology assisted targets lifelong learning and aims to harness technology to support excellence in teaching, learning and research. Technology integration in education inspires positive changes in teaching methods on an international level (Norman, 2016). Integration of this technology is nothing without teachers' knowledge about computer. Thus, teachers should be more knowledgeable to be able to teach learners' of today's advancements.

The wide range of technological advancements is also being viewed to be appropriate for the indigenous people. ICTs can be used to extend learning opportunities to the indigenous students, though they are in remote and isolated and as part of the Millennium Development Goal 8. It is recommended that governments support research and development projects that empower indigenous communities to provide culturally relevant content, pedagogies and learning environments for their students. Therefore, the level of access to ICT devices and connectivity is needed to support the curriculum (UNESCO, 2011). But before these can be fully implemented, they need to consider a lot of factors in the implementation process. The success of e-learning among Indigenous People will depend on several factors: first, it will depend on the readiness and ability to integrate Indigenous Peoples' friendly e-learning programs into existing educational systems. It begins with the teachers' readiness to embrace "Indigenous Knowledge" and the ways in which teachers teach. Second is the ability to adopt the teaching methodologies with pedagogical approaches that take advantage of the opportunities afforded by e-learning (Boyle and Wallace, 2011). Additionally, the lack of recognition and encouragement of timely and effective use of ICT and using ICT in a large class size is another factor (Tezci, 2011). UNESCO and UNICEF are working to improve education for indigenous peoples through a range of projects and initiatives. One key lesson to be learned is that each indigenous people and each region must develop unique programs that reflect their unique languages, world views, cultures, livelihoods and histories (UNESCO, 2012).

Through many researches, the Department of Education with the help of the indigenous peoples' community has created an order that adopts the indigenous people's education curriculum. Under DO 32, series of 2015, which states that recognizing the right of indigenous peoples to basic education that is culturally rooted and responsive, the IPEd Curriculum Framework seeks to provide guidance to schools and other education programs, both public and private, as they engage with indigenous communities in localizing, indigenizing, and enhancing the K to 12 Curriculum based on their respective educational and social contexts. But despite the successful programs made for the indigenous learners, there are still a lot of factors to be considered in its implementation. In the research article of Nalugon (2015), he has identified some key problem areas in the implementation of the ICT in basic education: few teachers had fear of the technology, constraints of the annual Education Budget, lack of maintenance of ICT resources and technician staff, and limited availability of educational software and courseware.

METHODOLOGY

The researcher made use of descriptive-evaluative method to evaluate the extent of the implementation of the DCP. The settings of the study were the schools of the indigenous community in the Divison of Surigao del Sur from the municipalities of San Miguel, Cantilan, and Lingig who were also the beneficiaries of the DepEd Computerization Program. Additionally, the recognized schools were geologically situated in the mountainous parts of Surigao del Sur, hence, it was expected to be miles away from highways.The mode of transportation of the people there is through a motorcycle with extended seats to accommodate more passengers locally termed as *habal-habal*.

RESULTS AND DISCUSSION

The data gathered were analysed and interpreted giving the answers to the problem of this study.

Profile of the Teachers assigned in the Indigenous Schools

Profile	Teachers and ICT Coordinators	
	Frequency	Percentage
Age		
20 - 40	105	94.60%
41 – 50	4	3.6%
51 – 60	2	1.8%
Total	111	100%
Sex		
Male	22	19.82%
Female	89	80.18%
Total	111	100.00%
Length of Service		
1 – 5 years	83	74.77%
6-10 years	22	19.82%
11-15 years	6	3.60%
Total	111	100.00%
Number Hours of Trainings Related to ICT		
8 – 16 hours	91	81.98%
17 – 24 hours	7	6.31%
25 – above hours	13	11.71%
Total	111	100.00%
Educational Attainment		
BEED	18	16.22%
With MA units	91	81.98%
Master's Degree	2	1.80%
Total	111	100.00%

Table 1. The Profile of DCP Implementers

Table 1 shows the profile of the DCP Implementers. Those teachers under 20-40 years old are the one teaching the indigenous learners therefore are in the most productive years of teaching. Few are in the near retirement age. Also table 1 greatly shows that the newly hired teachers have usually been assigned to the indigenous schools, and most of the implementers have less training attended regarding ICT. Conversely, many teachers are trying to grow professionally in a way that they are enrolled in graduate and post graduate studies.

Extent of Implementation of the DepEd Computerization Program in the IP schools

DCP & ICT Infrastructure	Weighted mean	Adjectival Rating
The e-classroom of the school is secured.	3.08	Moderate extent
The e-classroom is safe from water leaks.	2.86	Moderate extent
The e-classroom's outlets and plugs are not damaged.	3.41	Great extent
The school followed the protocols for e-classroom setup	2.91	Moderate extent
The computers and other equipment are functional.	2.92	Moderate extent
There are enough ratios of computers to the pupils.	2.11	Less extent
The computers and other equipment have softwares installed in teaching and learning use.	2.58	Moderate extent
There is an internet connection provided.	1.52	None at all
Weighted Mean	2.67	Moderate extent

Table 3. Extent of Implementation of the Program on Infrastructure

The above table shows that of all the indicators of the implementation of the infrastructure, the e-classroom's outlets and plugs are not damaged got the highest rating with the remarks of Great Extent with the mean of 3.41. This implies that the above area is highly monitored by the implementer, which is very significant in the maintenance of the program. This conforms to the review of Caincross, S & Mannion, M. (2011) that before any ICT-based program is launched, policy makers and planners must carefully consider the appropriate rooms or buildings available to house the technology. Old school buildings go through extensive retrofitting to ensure proper electrical wiring, heating/cooling and ventilation, and safety and security would in place.

Extent of Implementation of DepEd Computerization Program in IP Schools of Surigao del Sur relative to its integration to the school system.

Integration of ICT into School system	Weighted mean	Adjectival Rating
Pupils are given chances to use and have hands-on experiences about the basic programs.	2.66	Moderate extent
ICT facilities are being used by the teacher for their teaching.	2.03	Less extent
Teachers can use the DCP computers to efficiently perform tasks.	2.93	Moderate extent
Teachers can use the DCP materials for lesson planning, creating of CAIMs and reports.	2.77	Moderate extent
All teachers are using the DCP materials in the teaching and learning process.	2.67	Moderate extent
ICT Coordinators conduct LAC Sessions about computers and use of basic programs.	2.86	Moderate extent
The principal / school head supports the program.	3.14	Moderate extent
DCP gives greater control over processes & quick implementation of government policies.	2.90	Moderate extent
Total weighted mean	2.74	Moderate extent

Table 3.1. Extent of Implementation on Integration of the Program to the School System

From the result, it shows that the implementation of the DCP in IP schools of Surigao del Sur in terms of integration of ICT into the school system, principal/school head supports the program. This implies that the school heads' of the DCP recipients are extending their support for the utilization of the units to serve its desired purpose.

Extent of Implementation of DepEd Computerization Program in IP Schools of Surigao del Sur in terms of raising the ICT literacy of the learners

Raising the ICT literacy of the learners	Weighted mean	Adjectival Rating
Indigent pupils have knowledge about computers.	2.62	Moderate extent
Pupils are given chances to use the computers and have hands-on experiences.	2.76	Moderate extent
The Grade 5 and 6 pupils use computers as part of their lesson in EPP.	2.25	Less extent
Computer-aided instructional materials were evident in the teaching-learning process.	3.08	Less extent

Learners produced output using the program	2.32	Less extent
Learners have the chance to teach their classmates on how use the computers.	2.48	Moderate extent
Computerized diagnostic assessment is evident in assessing learners.	2.82	Moderate extent
Teachers use alternative electronic devices in teaching	3.11	Moderate extent
Total Weighted Mean	2.68	Moderate extent

Table 3.2. Extent of Implementation of the Program on Raising ICT Literacy of the Learners

Table 3.2 shows that the teachers' use of alternative electronic devices in teaching got the highest mean of 3.11 with an adjectival rating of moderate extent. This figure implies the innovativeness of teachers. Likewise, this result also shows that the implementers are not dependent on the equipment provided by the DCP. They are trying to improve the program itself to provide the best service they could offer to their client. In the indicator that states that the Grade 5 and 6 pupils use the computers in the e-classroom as part of their lesson in EPP, this part got the lowest mean of 2.25 with a remark of less extent. This result is expected since the activities given to the pupils in this discipline are more focused in agriculture, handicrafts, and carpentry. Hence, they do not really engage in ICT related activities. However, the result above does not affect the functionality of DCP.

Extent of Implementation of DepEd Computerization Program in IP Schools of Surigao del Sur in terms of monitoring and evaluation

Monitoring and evaluation	Weighted mean	Adjectival Rating
The school administrator monitors the use of the program	3.00	Moderate extent
The Division ICT Coordinator monitors the program in the IP schools.	2.64	Moderate extent
ICT Coordinator easily contacts technical assistance regarding the program.	2.79	Moderate extent
There is a regular ICT monitoring and evaluation of the damages, problems and repairs of the program.	2.14	Less extent
District ICT or Property Custodian checks the functionality of the equipment.	2.36	Less extent
IT experts are accessible and easily contacted in terms of hardware and software problems.	2.23	Less extent
Teachers are knowledgeable in operating and assessing the equipment.	3.13	Moderate extent
Teachers utilize e-class record and Daily Lesson Log.	3.59	Great extent
Total Weighted Mean	2.74	Moderate extent

Table 3.3. Extent of Implementation of Program in IP schools on Monitoring and Evaluation

It shows that the given indicators of implementation, teachers utilize e-class record and Daily Lesson Log got the highest mean of 3.59 with the remark of great extent. This result implies that the implementers are practicing the DCP in their work. On the other hand, on the indicator wherein there is a regular ICT monitoring and evaluation of the damages, problems and repairs of the program got the mean of 2.14 with the remark of less extent. This figure

entails that this indicator is not closely monitored. A factor to be considered is the distance of the school wherein reporting of damages is not that eminent.

Profile of the implementers and the implementation of the DCP

Variable Tested	Computed R	P-Value	Decision
Age vs Extent of Implementation of the Program	0.264	0.114	Not significant
Gender vs Extent of Implementation of the Program	0.100	0.557	Not Significant
Length of Service vs Extent of Implementation of the Program	0.169	0.316	Not Significant
Trainings vs Extent of Implementation of the program	0.189	0.262	Not Significant
Highest Educational Attainment vs Extent of Implementation the Program	0.099	0.559	Not Significant

Table 4. Significant Relationship between the Profile of the Implementers and the Implementation of DepEd Computerization Program

It shows that in terms of age of respondents, gender, length of service, trainings related to ICT and highest educational attainment of the respondents against the extent of Implementation of DepEd Computerization Program having a Computed R near the boundary of 0 to -1 this implies that the null hypothesis is accepted. This means that the profile of the respondents does not affect the implementation of DCP. Considerably, regardless of the profile of the implementer, the DCP implementation is not affected. Miller (2011) confirms the results of the study, which states that teachers who have completed an advanced degree had no significant effect on student performance. This was also corroborated by Nacario & et al., (2014) who posited that student achievement is unaffected by whether classroom teachers have advanced degrees.

The Grades of the grade 5 pupils in EPP against the extent of implementation of the program.

Variable Tested	Computed R	P-Value	Decision
Grades of the Grade 5 pupils in EPP vs ICT to School System	0.887	0.001	Significant
Grades of the Grade 5 pupils in EPP vs Raising the ICT literacy of the Learners	0.799	0.001	Significant

Table 5. Significant Relationship Between the Grades of EPP of Grade 5 Pupils and the Extent of Implementation

Table 5 shows the relationship between the Grades of the Grade 5 pupils in EPP of the schools under study versus the extent of implementation in terms of the integration of ICT to the school system and raising ICT literacy of the learners. Given that the result of a high Computed R and low P-value, the result shows that there is a high significant relationship between the grades of the Grade 5 pupils in EPP and the integrating ICT to school system and also raising the ICT literacy of the learners in the IP community. These results give great impact to the academic endeavor of the pupils because they were given chances to have an exposure and hands-on experience of the equipment.

Problems encountered in the implementation of the DepEd Computerization Program in the IP schools of Surigao del Sur

Problems Encountered	WM	Adjectival Rating
Infrastructure		
The materials/ e-classroom are not secured.	2.64	Moderately Serious
No electricity in the area.	1.43	Not Serious At All
Plugs and outlets are broken or damaged.	1.57	Not Serious At All
The ratio of computers to pupils is not enough.	3.36	Serious
The computers are damaged due to improper use and viruses.	2.79	Moderately Serious
Total Weighted Mean	2.36	Serious
Teachers' readiness		
Only the ICT coordinator is knowledgeable about the program	2.27	Serious
Teachers hesitate to use the computers.	1.99	Serious
Teachers have insufficient skills in using the equipment.	2.09	Serious
Inadequate trainings were done relative to the teachers' preparation on the DCP.	2.40	Serious
Teachers do not explore other software that is useful in teaching the learners.	2.08	Serious
Total Weighted Mean	2.17	Serious
Management and Support		
DCP equipment is damaged after 2 years of warranty and DepEd ICT maintenance crew to check the equipment.	2.59	Serious
No budget/funds to support the replacement or damaged equipment.	2.86	Serious
No personnel that were hired to look after the equipment during night time.	2.70	Serious
Undisciplined pupils damage the equipment.	2.39	Less Serious
No sustainability plans in the implementation of DCP	2.71	Serious
Total weighted mean	2.65	Moderately Serious
Community		
They are not open about technological advancements.	2.35	Serious
The community gives less support and interest in this program	1.94	Not Serious at All
No other technological resources that could help the learners improve their learning in ICT.	2.92	Serious
They have less knowledge about computers, thus it is difficult to teach the learners about computers too.	2.94	Serious
Less communication between the community and the school about the implementation of the program	2.74	Serious
Weighted Mean	2.58	Moderately Serious

Table 6. Problems Encountered in the DepEd Computerization Program Implementation

The table shows that in the ratio of computers to pupils was considered the major problem encountered in the implementation of the program because of its highest mean. This denotes that this indicator holds the greatest challenge in the implementation of DCP. As stated in an article of ICT4E (2015), the current ICT integration in education remains a large task. One is the student-computer ratios and teacher-computer ratios.   Another problem encountered in

the implentation was the inadequate trainings done relative to teachers' preparation on the DCP. These results show that implementers of the DCP in the IP schools in Surigao del Sur are not that skillful and knowledgeable in using the DCP materials and it greatly shows that there are less school trainings conducted by the school ICT coordinator that would help other teachers improve their readiness and capabilities in computers.

Furthermore, the indicator of no budget/funds to support the replacement or damaged equipment got the highest weighted mean of 2.86, these result show that this indicator is a serious problem in terms of the DCP maintenance, budget for the repairs of the DCP materials and no sustainability plans for the implementation of the DCP. Another problem being face is that the people in the community has less knowledge in computers and how to operate and manage computers; thus, it is difficult to teach the learners about computers too. But on the positive side, the result also show that the community gives less support and interest in this program which only means that the IP community is interested and willing to embrace change and willing to learn ICT technologies.

CONCLUSIONS

Based from the interpreted and analyzed data of this study it showed that teachers with sufficient trainings related to ICT and with graduate and post graduates studies can really utilize the equipment provided by the DCP. Secured E- classroom, supportive school administrators, teachers' initiative in using alternative electronic devices and utilization of e-class record and daily lesson log are essential in the maximization of carrying out the objectives of the program. The implementation of the programs has no significant relationship to the profile of the implementers. Additionally, the results of the significant relationship of the academic performance of the learners and the extent of implementation of the program give great impact to the academic endeavor of the pupils because they were given chances to have an exposure and hands-on experience of the equipment. The program is not fully implemented due to lack of equipment, insufficient trainings of implementers and inadequate knowledge of the IP community about computers.

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